

In the Specification:

Insert the following subheading and paragraph on a separate page at the end of the application (following the claims):

ABSTRACT

AI
Room temperature castable and curable poly urethane/urea-forming compositions are disclosed, which comprise (a) a reaction mixture of an isocyanate component or an isocyanate functional prepolymer having at least two isocyanate groups per molecule that contains or has been reacted with polytetramethylene glycol; (b) an aromatic amine curative; and (c) a phosphate ester or phthalate ester having a vapor pressure of less than 100 mPa at 25°C. Also disclosed are polyurethane articles cast from the foregoing compositions and a process for the room temperature curing of a poly urethane/urea-forming composition.

In the Claims:

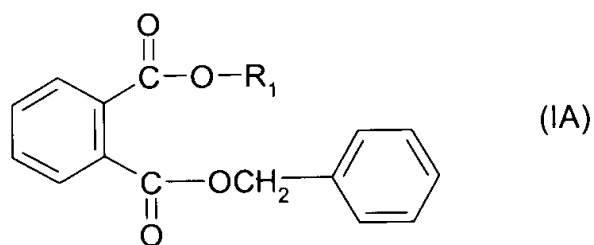
Please cancel claims 1-19.

Please add the following new claims 20-49.

20. (New) A poly urethane/urea-forming casting composition, which is capable of being cast and cured at temperatures between 15 and 35°C, comprising:

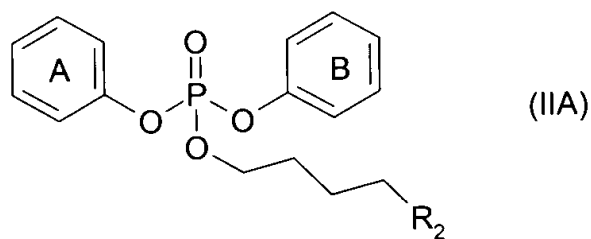
- 11-2
- (a) an isocyanate component or an isocyanate functional prepolymer having at least two isocyanate groups per molecule that contains or has been reacted with polytetramethylene glycol;
 - (b) an aromatic amine curative; and
 - (c) a phosphate ester or phthalate ester having a vapor pressure of less than 100 mPa at 25°C;

wherein said phthalate ester is a monomer according to formula IA



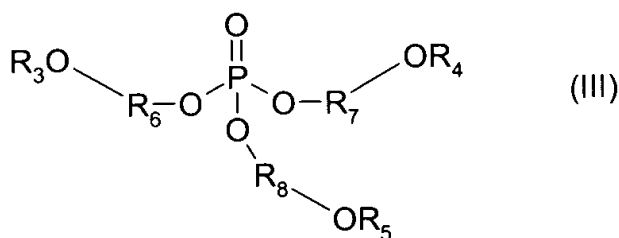
in which R₁ is unsubstituted or alkyl-substituted C₃-C₁₂ alkyl; and

wherein said phosphate ester is a monomer according to formula IIA



in which R₂ is hydrogen, or unsubstituted or alkyl-substituted C₂-C₆ alkyl, and aromatic rings A and B independently of one another are unsubstituted, or substituted by one or more alkyl substitutions; or

wherein said phosphate ester is a monomer according to formula III



in which R₃, R₄, and R₅, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkyl, and R₆, R₇, and R₈, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkylene.

21. (New) A casting composition according to claim 20 wherein component (a) is a low free toluene diisocyanate prepolymer blend having a free toluene diisocyanate content below 0.4% by weight.

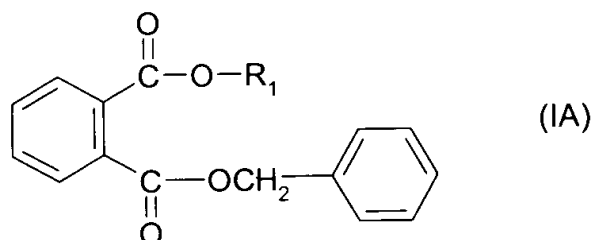
22. (New) A casting composition according to claim 20 wherein component (a) is a prepolymer blend that is a reaction mixture of an organic diisocyanate and polytetramethylene glycol.

23. (New) A casting composition according to claim 20 wherein the aromatic amine curative is selected from the group consisting of diethyl toluene diamine, tertiary butyl toluene diamine, dimethylthiotoluene diamine, and 1,2-bis(2-aminophenylthio)ethane.

24. (New) A casting composition according to claim 23 wherein the aromatic amine curative is dimethylthiotoluene diamine.

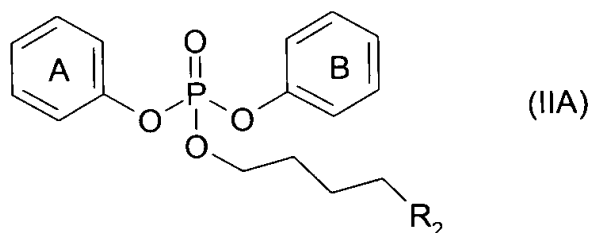
25. (New) A casting composition according to claim 20 further comprising a polyether- and/or polyester polyol having a number average molecular weight of at least 250.

26. (New) A casting composition according to claim 20 wherein component (c) is a phthalate ester according to formula IA



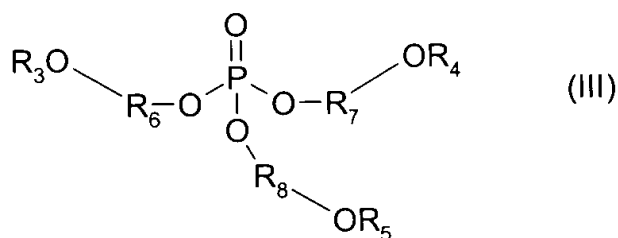
in which R₁ is unsubstituted or alkyl-substituted C₃-C₁₂ alkyl.

- 27 (New) A casting composition according to claim 20 wherein component (c) is a phosphate ester according to formula IIA



in which R₂ is hydrogen, or unsubstituted or alkyl-substituted C₂-C₆ alkyl, and aromatic rings A and B independently of one another are unsubstituted, or substituted by one or more alkyl substitutions.

28. (New) A casting composition according to claim 20 wherein component (c) is a phosphate ester according to formula III



in which R₃, R₄, and R₅, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkyl, and R₆, R₇, and R₈, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkylene.

29. (New) A casting composition according to claim 20 wherein component (c) is ethylhexyl diphenyl phosphate.

30. (New) A casting composition according to claim 20 wherein component (c) is butyl benzyl phthalate.

31. (New) A casting composition according to claim 20 wherein component (c) is isodecyl diphenyl phosphate.

32. (New) A casting composition according to claim 20 wherein component (c) is tributoxyethyl phosphate.

33. (New) A process for preparing a polyurethane casting, comprising the following steps: contacting (a) an isocyanate component or an isocyanate functional prepolymer having at least two isocyanate groups per molecule that contains or has been reacted with polytetramethylene glycol, with (b) an aromatic amine curative having at least two primary amine groups, and (c) a plasticizing agent having a vapor pressure of less than 100 mPa at 25°C and/or an evaporation rate of less than 40% after 24 hours at 87°C according to ASTM 1203-67; pouring the combination of (a), (b) and (c) into a mold; and curing, wherein the foregoing steps are all carried out at temperatures between 15 and 35°C.

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34. (New) The process of claim 33 wherein component (a) is a low free toluene diisocyanate prepolymer blend having a free toluene diisocyanate content below 0.4% by weight.

35. (New) The process of claim 33 wherein component (a) is a prepolymer blend that is a reaction mixture of an organic diisocyanate and polytetramethylene glycol.

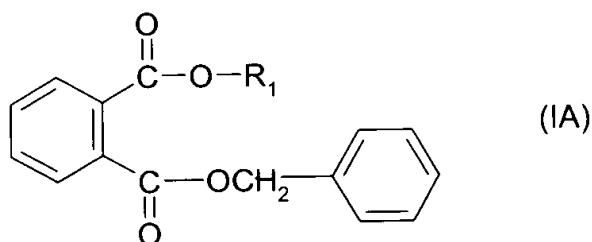
36. (New) The process of claim 33 wherein the aromatic amine curative is selected from the group consisting of diethyl toluene diamine, tertiary butyl toluene diamine, dimethylthiotoluene diamine, and 1,2-bis(2-aminophenylthio)ethane.

37. (New) The process of claim 33 wherein the aromatic amine curative is dimethylthiotoluene diamine.

38. (New) The process of claim 33 further comprising the step of adding to the combination of (a), (b) and (c) a polyether and/or polyester polyol having a number average molecular weight of at least 250.

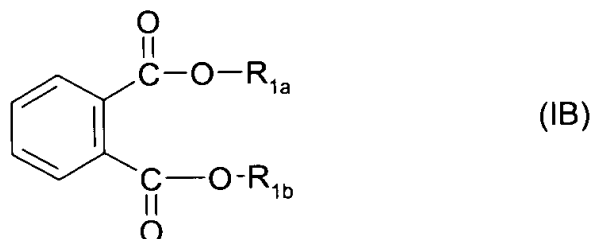
39. (New) The process of claim 33 wherein component (c) is a phosphate ester or phthalate ester having a vapor pressure of less than 100 mPa at 25°C.

40. (New) The process of claim 39 wherein component (c) is a phthalate ester represented by formulae IA



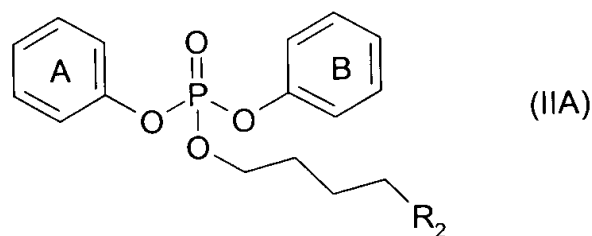
wherein R₁ is unsubstituted or alkyl-substituted C₃-C₁₂ alkyl.

41. (New) The process of claim 39 wherein component (c) is a phthalate ester represented by formula IB



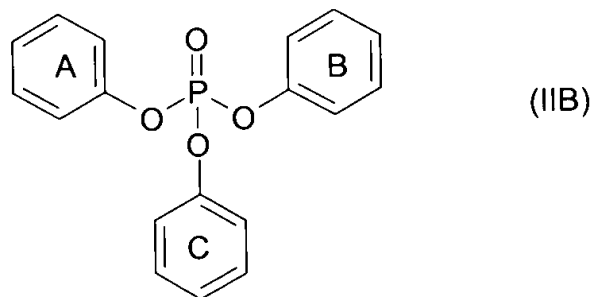
wherein R_{1a} and R_{1b} , independently of one another are unsubstituted or alkyl-substituted C_5-C_{12} alkyl.

42. (New) The process of claim 39 wherein component (c) is a phosphate ester represented by formula IIA



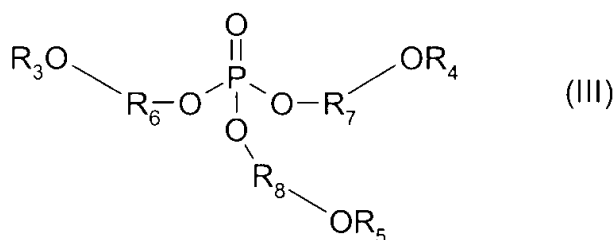
wherein R_2 is hydrogen, or unsubstituted or alkyl-substituted C_2-C_6 alkyl, and aromatic rings A and B independently of one another are unsubstituted, or substituted by one or more alkyl substitutions.

43. (New) The process of claim 39 wherein component (c) is a phosphate ester represented by formula IIB



wherein aromatic rings A, B and C, independently of one another, are unsubstituted, or substituted by one or more alkyl substitutions.

44. (New) The process of claim 39 wherein component (c) is a phosphate ester represented by formula III



wherein R₃, R₄, and R₅, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkyl, and R₆, R₇, and R₈, independently from one another, are unsubstituted or alkyl substituted C₁-C₅ alkylene.

45. (New) The process of claim 39 wherein component (c) is ethylhexyl diphenyl phosphate.

46. (New) The process of claim 39 wherein component (c) is butyl benzyl phthalate.

47. (New) The process of claim 39 wherein component (c) is isodecyl diphenyl phosphate.

48. (New) The process of claim 39 wherein component (c) is tributoxyethyl phosphate.